CACTUS AND SUCCULENT JOURNAL

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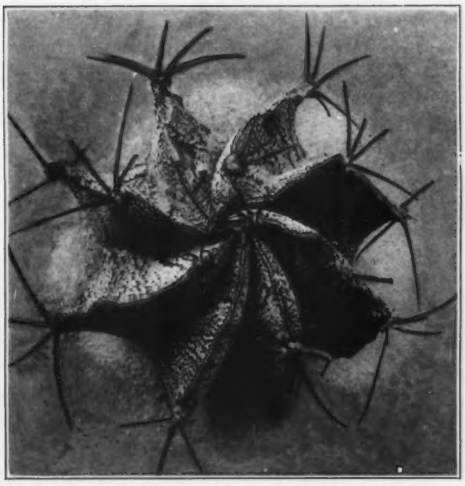
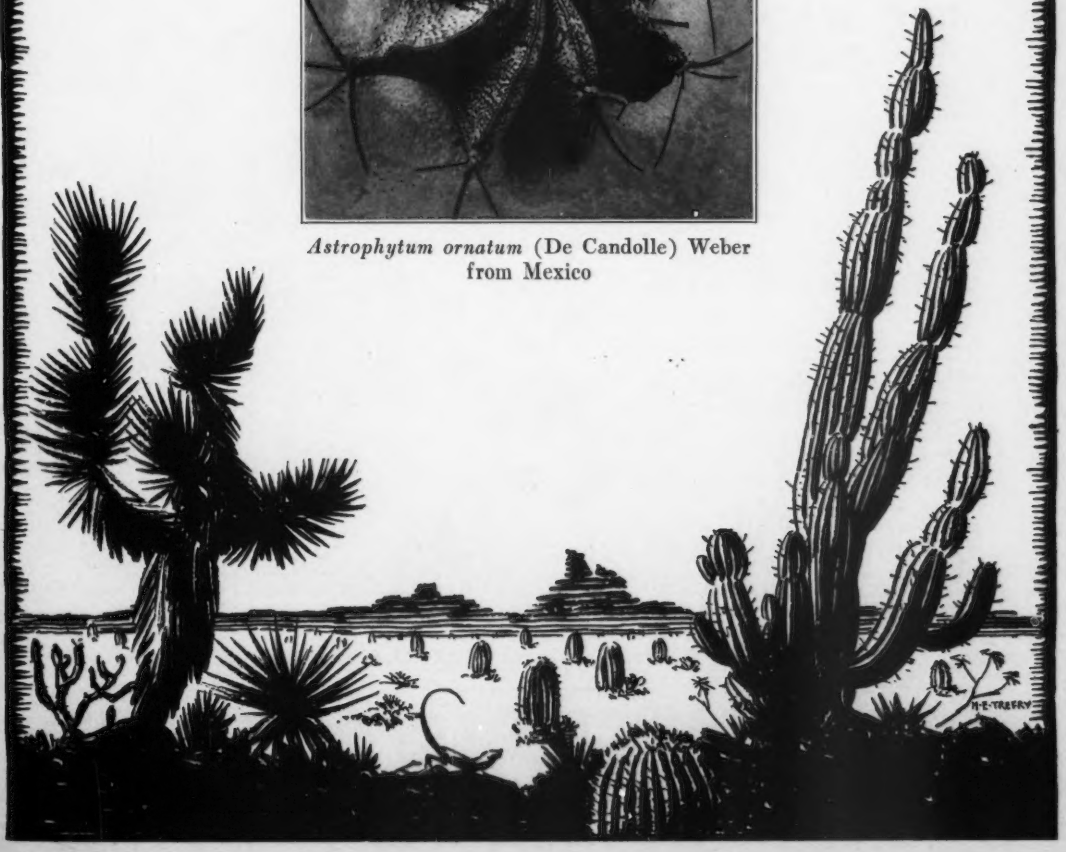


Astrophytum ornatum (De Candolle) Weber
from Mexico



CACTUS AND SUCCULENT JOURNAL

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VOL. VII JULY, 1935 No. 1

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Advertisement from the Century Illustrated Magazine of March, 1889. Photo by H. Wm. Menke.

Oklahoma Cacti

By MARION SHERWOOD LAHMAN

GENUS NEOBESSEYA.

Neobesseya missouriensis (Sweet) Br. & R., is the most widely distributed and the best known of our three species of this genus. It is found on dry or rocky prairies from Manitoba to Texas. Nuttall discovered it on the upper reaches of the Missouri River (hence *missouriensis*) and, in 1818, named it *Cactus mamillarius*. But the name has been changed several times since then. It is native throughout the greater part of Oklahoma, being especially numerous in the northeast quarter of the state. Here, whole colonies of this little cactus have departed from the descriptions of it in botanical works. Instead of being "usually simple," it is more often profusely cespitose, forming dense mounds of from six to one hundred twenty-five crowns, according to the age of the plant. The fine, radial spines are white, growing dingy with age. Centrals are usually wanting. The flowers are greenish-straw color upon opening, changing later to palest yellow. The filaments are twisted into a salmon-pink ball that casts a pinkish glow in the throat of the flower. Pink flowers are reported, but I have not seen any. The crimson, globose berries take nearly a year to ripen and are often seen on a plant at the same time with its Mayday relay of flowers. In this area, the plants flourish in the rich, black earth of limestone prairies where the surface is overlaid with broken rock. Normally, they receive plenty of rain; and they do best in cultivation if frequently watered.

Photo by James Slack.

Neobesseya missouriensis is probably the most numerous of Oklahoma tubercled cacti. It is common in rocky prairies to the Arkansas line. It grows both solitary and in compact mats. Its red fruits easily distinguish it from *Coryphantha vivipara* that grows in the same range.

Photo by James Slack.

Neobesseya similis grows in dense mats similar to *N. missouriensis*, but with much smaller stems. It has broader petals which are a delicate mauve, fading to straw color.

Abnormal growing conditions will distort the shape of a crown. One of these, in a flower-pot, was left in a poorly lighted corner of a room for some time. In its efforts to reach light, it elongated into the form pictured.

Neobesseya similis (Engelm.) Br. & R., also has undergone various mutations of name. The plant begins to proliferate at an early stage, and when several years old, forms a compact mat two or more decimeters in diameter, composed of perhaps a hundred little crowns of various sizes. The crowns are much smaller and more nearly confluent than those of *N. missouriensis*, for which the plant might in some ways be mistaken. But there is no mistaking the delicate mauve flower

with its fewer, broader petals. And the range is more restricted, Colorado, Kansas, Oklahoma and Texas. *N. similis* is a rather elusive species, reported from one place or another occasionally, but authenticated seldom. I have seen it only in three places in the state. The plant pictured, with a few others I found on a wild, rocky prairie in north central Kay County. A couple of small ones were discovered in the northwest in Texas County. And I saw a single large one near a deserted farmhouse in the extreme northeast part of the state where it probably had been a garden pet.

Neobesseya robustior (*Neobesseya wissmanii* Br. & R.) grows in sandy soil in Oklahoma and Texas. It is often confused with *Neobesseya similis* and by some authors considered a variety.

I know very little about this species from actual observation. I have one plant, a solitary crown, that looks like an unusually large *N. missouriensis;* but the outer segments of the flower are not ciliated as in the other two species. This plant was growing in a sandy bottom of the Washita River in the southern part of the state.

WE, TOO, WERE IGNORANT ONCE!

The following priceless collection of questions asked of one of our members at a recent show reminds us that there is a great amount of missionery work yet to do. We sometimes forget that we may have asked these same questions.

Why doesn't my Christmas Cactus bloom?
Don't you ever water cactus?
Do you plant them in sand?
Is this a cactus?
What is a succulent?
What's the difference between a cactus and a succulent?
How long will they live in these little pots?
How big will they grow?
How long before you have to transplant them?
How *often* do you water them?
Do you just give them a teaspoonful of water at a time?
Must they have sun?
How long can they live without water?
Do these all grow right out on the desert?
And do they all come from Palm Springs?
How many different kinds of cactus are there?
How many are displayed here?
Which is the rarest?
Which is the most valuable?
What's the name of this cactus?
Yes, I know, "Ocotillo" is the scientific name, but doesn't it have a common name?
Is it rare?
Does it grow tall?
Does it bloom?
I had two Christmas cactus that would not flower. I planted them both in the same pot and they flowered in three weeks.
How old does it have to be to bloom?
Does it just bloom once a year?
How long will the flowers last?
What color are they?
Does it grow fast?
Is this the real "crown of thorns?"
Does the "water-barrel cactus" really give water?
Do you s'pose that was actually water we heard plash when we shook one on the desert?
Does the "jumping cactus" jump?
Where is the "mother-in-law's tongue cactus?" And the "rabbit's ear," the "teddy-bear," the "polar-bear," "flaming-heart," "pincushing," "dumpling cactus," "peanut," etc., etc., etc.?
Oh, you people don't know very much about cactus if you don't know what those are. They're common!
Do you just scatter seeds around in these dishes and they grow up to be cactus bowls?
Do they grow from slip?
How do you start them?
What kind of soil do you use?
Why did mine die?
What is a graft?
Can anyone do grafting?
I have a cactus—it must be very rare because none of you people have any here—can you tell me the name of it?
How can you remember all those terrible names?
Why do cactus have such awful names?
What is the price of this one?
Does that include the pot?
Can you pack them to ship?
Will they take them away at the state line?
Will it hurt them to stay in a trunk for a while?
Will they freeze?
Oh, do cactus have bugs too? I didn't think anything would bother a cactus!
Can't you grow these cactus here? Someone said so many of them came from Africa.
This little plant here with the teeth on the edge of the leaves really does catch flies, does it?
I brought my kodak over during my noon hour to take a picture of a night-blooming cereus flower. Where will I find one?
Did all these other kinds of cactus really grow from this one here labeled "Mother-of-cactus?"
Which is the cactus that blooms once every hundred years?
Isn't it wonderful that little plant knows when another century has rolled around?
Isn't nature marvelous?

FRICK'S NOTES

Dr. D. D. Keck of the Carnegie Institute of Washington told a botanical audience at a meeting of the American Association for the Advancement of Science that radical changes in locations of plants do not make radical or permanent changes in form.

Dr. Keck's experiments were carried out between California mountain tops and sea level, and were undertaken with the object of finding out whether plants carried to an altitude alien to their natural habitat would respond by turning into new species. The plants made modifications in external form, but the changes did not become permanently hereditary, and when they or their decendants were returned to the original environment they soon reverted to their original state.

This experiment perhaps explains the reason for many of our closely related cactus species.

Discovery of the Texas Star

By J. B. Ely

The author of the following "rambling story" claims no further excuse for this obtrusion from obscurity into the ranks of the immortals (of cacti), than that he "discovered" the cacti, and fitted them into the star that had an honored place in the exhibits at the Century of Progress.

As a background I might say that collecting cacti is my profession, and that I have been "growing things" in Texas just 58 years—right in the midst of the "baby cactus" world. I will proceed to tell how the several hundred flawless cacti of the Echinocereus, Mammillaria, Coryphantha, Echinocactus and Opuntia types were found, with which to build the Texas Star.

Not for money, nor for advertising; but for the "lure" of it a territory of 250 by 100 miles square (not square miles) was explored. Like the Indians that roamed these hills "yesterday," the different tribes of cacti segregate into different "hunting grounds" seldom mixing except where soil and moisture adaptable to one species merges into another. The "old timer" soon learns the habitat of each species; but the unprecedented drouth of the past two years has driven all species to the low lands in search of moisture. Only one tribe—the *Coryphantha neomexicana* (Horned Toad) still clings to the rocky hills where it can burrow its roots beneath the lime rock. Water, it can do without, but lime, it must have; and it, like all other cacti of this section, being a past master of camouflage, assumes the exact shade of its adjacent rock. Although very rare in this locality, it was especially desired that this species should form one of the star points—and so to the hills we went. The trail was taken up where my only specimen was found and pursued westward for ten miles before "oil" was struck. On a high rocky tableland about twenty specimens were found. Then the trail was lost. But a rich find was made of the purest strain of *Echinocereus reichenbachii* I have ever seen—white as snow. This started me on another point of the star. There are five varieties or colors in this type, shading into each other. We call them "cobs" from their shape. They have so hybridized themselves that a true type is hard to find. I have often found several colors springing from one seed pod.

Several succeeding expeditions for Toads were fruitless and I had about despaired of completing my star point. Finally my friend Dr. Ball, who is an ardent collector, and member of the Cactus and Succulent Society, located unlimited "Toads" in the hills north of Ft. Worth, 150 miles eastward. He was kind enough to take me to the spot, and dumped me by the roadside at 9 o'clock a. m. When he called for me at 6 p. m. I had selected enough plants and thus the first star-point was completed with *Coryphantha neomexicana*. Although this cactus is one of the heaviest seed producers I know of, I have yet to find where more than a single seed in one place has germinated and produced a plant. This plant grows about 4 inches in diameter and then multiplies vegitatively in a circle around itself until a mound containing as high as 100 separately rooted plants has been found.

Now for the star-point of "cobs." These Echinocerei, under normal conditions, abound in countless numbers in an area bounded by Ft. Worth to the east, Big Spring to the west, San Antonio to the south and a hundred miles north. Outside of that they gradually lose their identity and other allied tribes take the territory. In the sandy hills around Big Spring we find the *Echinocereus dasyacanthus*, from a light to a vivid pink, like a painted cornucopia, with its spines straight out and packed so closely that the body is entirely obscured. Between this type and our own lacy Echinocerei, with its spinules lying flat in spidery circles, is a "no man's land" where we find the *Echinocereus pubello* (we call it) forming as nearly the missing link between the two types above described, as could be imagined.

The five varieties of Echinocerei abounding in this zone differ only in color and of these it remained only to select true shades and proper sizes to build the star point down from its base with large highly colored plants, graduating downward with smaller and lighter colored sizes to its point. This was not as simple as it would seem. In the search, lasting through a period of three months, countless millions of dead carcasses were encountered—due to the devastating drouth.

The few that remained, although denizens of high and dry hills, seemed willing enough to take up their abode in the shady nooks of the low lands amongst *Hamatocactus setispinus,* which is a lover of shade and moisture. *Echinocereus pectinatus* (blackish-red), *E. caespitosus* (light bronze), *E. marginii* (rich brown), *E. roemeri* (sunset-gold) and *E. reichenbachii* (white shading to pink), were used to graduate the color scheme from base to point. Before they begin forming into clumps, these "cobs" are as impish and playful as a bunch of school kids. During winter and dry spells they squat flat amongst leaves and grass and peep out with one eye 'till you pass them, no telling what they do. After a good rain they pop up like Rain Lilies and triple their size in a few days.

Coryphantha vivipara was the third star point. Proof against heat and cold, or drouth. But it must have sand to sit on and rich loam for its roots. It abounds from the Gulf to Canada. Although a fine bloomer and loads itself with immense seed pods strutted with seed, never more than one is found in a place and you walk a hundred yards, or half a mile to find another. They are beloved by Red Spider and have a bad habit of rotting at the ground line. A perfect one is picked up out of a hundred. It is called "sunset" because of its prismatic colored spines and is most easily sighted just before sunset by its scintilating colors. It was a matter of saving up the good ones during a three months scout. Three inches in diameter is its limit in size. Then it clusters like *Neomexicana.* It is one of the most beautiful of cacti.

The fourth star point was made of *Echinocactus homalocephala texensis robustispina.* "Devilhead" for short. I needed five giants to place at the five points where the star bases came together. It took a year to save these up—twelve inches in diameter. I had a startling experience while hunting these. A ranchman told me he could take me to one as large as a wash tub. I offered him a dollar to do it—and he did. But when we arrived and my eyes lit on it my veins almost froze. There it sat—a mound like a German helmet, minus the spike—but not a devil head. It was made up of almost two thousand heads an inch in diameter and compact into a solid mass a foot high and two feet across. I paid the dollar and he still thinks it was a "devil." Last summer it had as high as 500 blooms at a time and bloomed for two months, a new set each day. St. Louis Botanical Gardens named it *Coryphantha polycephalus.* A small division begins circling itself with small heads as soon as growth starts. The center head never gets larger than an inch.

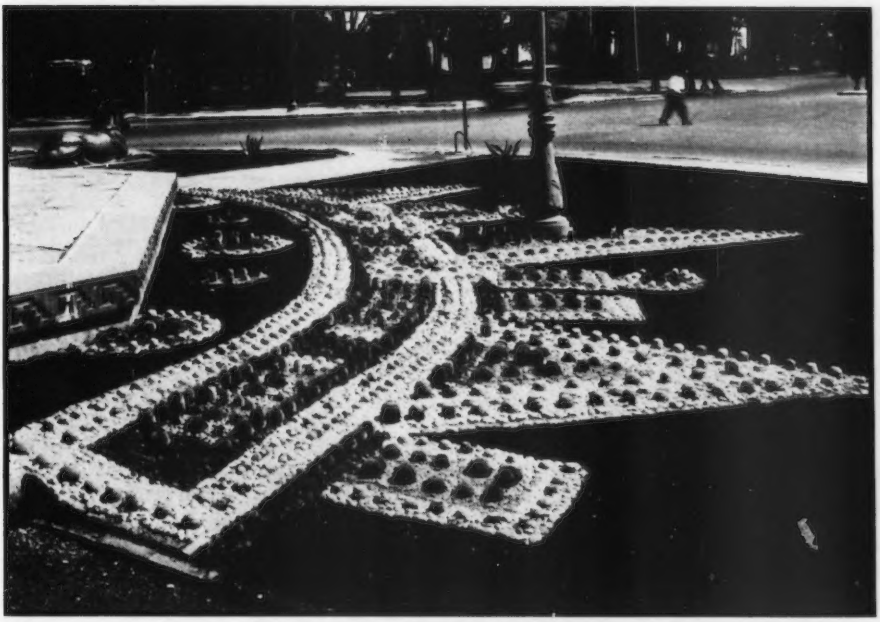
Devil Head likes tight prairie soil and plenty of blue sky. Large ones are difficult to see, and very small ones require a microscope, so flat it hugs the ground. Grazing stock trample them until it's next to impossible to find one with unbroken spines. Several thousand were looked over before enough perfect ones of the right sizes were selected to complete the fourth point.

Hamatacactus setispinus (Pine Apple cactus) seems to have originated near Albany, Texas. The writer has traced it from this point southward, along a widening watershed about 700 miles long, to Rio Grande City. Always confined to one general watershed, its habitat is in the shape of a star point. By merely contracting this area into smaller dimensions, approximately three feet long, the fifth star point was made and the Grand Old Star was completed, except a center group to be described later. The process of contraction was to select the few perfect specimens to be found in this large area for the smaller one. But that is "stretching it" rather than contracting it; for the specimens were found nearer home. The fact is, the burning sun and the arid lands of the southern area have so altered the appearance of the "Pine Apple" that good specimens are not found there. Heavy lowland soil, half shade and liberal moisture are to its liking and it finds these under Mesquite trees which thrive under identical conditions. Here it grows in vivid green mound shaped coils, a little taller than wide, its deep ribs winding to the right from bottom to top, its varicolored thread-like spines ending in a tiny hook which gives it a Ferocactus classification. Its blooming period is longer than any known cactus. If seed pods are kept snipped off it is in constant bloom from June to November. Colors vary from orange-yellow to creamy-pink. Being of a highly succulent consistency it is the prey of every known herbivorous bug, both chewing and sucking. But for the fact that its race is as prolific as the Hindoos, it would soon become extinct. It is hard enough at best to find perfect specimens, but the millions of dead carcasses due to the great drouth, calls up pictures of the Black Plague and it remains to snip around amongst the

few survivors for a good one.

A glorious, absolutely perfect specimen of *Opuntia englemannii* had been located and left in the woods to form the high center decoration of the star. With gunny sacks and ropes we went to "fetch" the beauty. Arriving at the spot, again "My young blood ran cold." A blamed cow had beat me to it. That was the only absolutely perfect large specimen I have ever seen in these parts. Hope the cow died. Well! I had some "second choices" spotted and used one, surrounded with several *Opuntia leptocaulis*, of which, thank goodness, there are millions.

The star was finished and there were cacti left,—in the woods and in my yard.



The above photograph, sent by our fellow member, Prof. Juan Balme of Mexico City, shows a unique formal planting of cacti around the statue of the Aztec Emperor Cuauhtemoc along the Avenue, Paseo de la Reforma.

The design, which is of an Astec sun, was made by Nicholas Ramirez de Arellano, Public Parks Engineer of Mexico City. Prof. Balme describes the effect as striking, yet only a comparatively few species of cacti make up the pattern. *Neomammallaria spinossima* var. *rubra* on red volcanic rock constitutes the red portion of the design; *N. elegans, N. compressa, N. parkinsonii* in single plants and two large clumps are arranged on white quartz and the yellow effect is achieved by the use of *N. rhodantha* and *Coryphantha ereta* on yellowish soil and rocks. The pattern is completed by the use of *Ferocactus latispinus* on blue-gray shale and rock in the central squares.

Cacti in Canada

I was very much interested to read the articles by Mr. H. E. Lefevre and Mr. George Mayer which show that we have more lovers of Cacti in Canada than we know of. However, the more the better and I hope they all join the Society. We are separated by such distances that it would hardly be possible to form a society of our own, so the only thing we can do is to resort to a friendly correspondence. I would be glad to hear from all who are interested in Cactus and Euphorbia in Canada.

For the benefit of those who have cold and wet or snowy winters to contend with, and this would include the border states, I will give my experiences in caring for, and wintering my collection.

In May, according to weather conditions, I bring all my specimens from the sunroom and attic down into the garden. They are all more or less in pots. Each fall I have the rockery prepared for the next spring, and plotted out according to Britton & Rose as nearly as possible, the exception being that I put my largest specimens in their class at the back so that I will not obscure the smaller ones. Starting with the Opuntias I place them on a gently sloping plateau plunging them in their pots, each pot with an inch of the rim showing. This prevents the pot being flooded when I water, which I do with a slow flow from a hose without a nozzle. The pot is then cool and damp, encouraging the outward growth of the roots. The plant gets enough direct moisture from the rains. I find that plunging Opuntias makes them easier to handle and I can change them around to admit of additions. Of course many have to be repotted in the spring as the majority have a very large root system. The flat Opuntia will stand more water than is the case of potted cylindrical, the pots of which hold the water too long for their good during and after heavy rains which sometimes last a week and more with us on the coast. This summer I am going to remove all my Echinocacti, Echinocereus and Neomammillaria from their pots and place them directly in the soil, as I found on comparison between potted and unpotted specimens this year that the latter were in much better condition. In the case of the larger "barrel" types I draw the soil loosely into a little heap, place the specimen on top and gently screw it down until it is just above the level of the ground, then poke the earth under to fill in any hollows which might make a fine "summer cottage" for wood lice, etc. This gives the plant ample drainage in the heaviest rain. Those that received this treatment this summer developed fine roots in every instance and showed considerable growth.

On taking them up I loosened the earth underneath with a trowel and transferred them to flats which I had prepared and filled with a mixture of half loam and half sand with a handful of granulated charcoal spread over the top. As I put each specimen in I drew the earth up into mounds and pressed the plant down on it. On examining several today, two months after taking them in, I found the rootlets clean and uninjured. This treatment keeps the air from the roots, they do not dry up as I presume they get sufficient moisture from the body of the plant.

The Opuntias are kept over in their pots. I give the thin cane types as any that appear to shrivel too much, a little water perhaps once a month by dipping the pot in water for a few seconds. With this treatment I have not lost a plant in the last two years. When I first started to collect cacti I lost 50 per cent of them during the winter because I could not resist the temptation to water them. In many instances they continue growth after I bring them in, which unfortunately is attenuated reaching for the light.

Next Spring I am going to start watering a month before I take them out so that they will start growth earlier; some of my Opuntias did not start growth until August, apparently being too busy making roots.

C. W. Armstrong
3830 West 19th Ave.,
Vancouver, B.C.

The Agaves can survive in a wide range of climate, although they are principly a desert plant they are known to have grown above the snow line or at an elevation of 8000 feet in the mountains of South America.

The following 8 pages are the seventh installment of the reprint of Britton and Rose "The Cactaceae" Vol. II.

Conophytum quarziticum Tisch.

By Dr. A. Tischer

Translated by Dr. R. W. Poindexter

Cushion-forming sprouts. Individual bodies up to about 2 cm. high, 8 to 10 mm. wide and 6 to 8 mm. thick, somewhat compressed and two-lobed above, somewhat heart shaped viewed sidewise, lobes sharply keeled, keel line not rounded, but cut off sharply toward the side and the notch surface, indeed frequently even depressed and forming an acute tip; lobes about 3 to 5 mm. high, not gaping; surface smooth, glabrous. The color of the bodies is chalky white-green; on the surface are scattered an accumulation of fine, dark green dots; occasionally this accumulation accentuates a keel line and a notch margin; beneath the notch there is usually a somewhat darker zone. Ovary visible in notch. Calyx tube 1.5 mm. long, light green with 5 light green sepals 1.5 mm. long. Corolla tube 3 to 3.5 mm. long, white, somewhat compressed, rather broad, up to 2.5 mm. in diameter. Petals in 2 rows, 25 to 28, about 3 mm. long, ½ mm. broad, acuminate or acuminately denticulate, white to light yellowish. Stamens projecting somewhat from the tube, the inner ones somewhat shorter, anthers yellow, filaments yellowish above, white below. Stigmas 5, slender, 2 mm. long, whitish green; no style. Flowers opening at night, with a strong carnation-like fragrance. Habitat: Great Namaqualand, Udabib Mountains. Erni. June, 1931.

Conophytum quarziticum Tisch. is obviously close to *C. quaesitum* N.E.Br.; it is distinguished from the latter, however, by its more elongated form, color and markings. Furthermore *C. quaesitum* comes from Little Namaqualand. A comparison of the flowers of the two species is unfortunately not yet possible, since the flower of *C. quaesitum* N.E.Br. is not yet known. *C. quarziticum* belongs, together with several other species, to an Undersection (Section) of *Conophytum* well distinguished from other bilobial forms, which I should like to entitle *Quarzitica* Tisch.; plant bodies two-lobed above, tips however mostly not long; flowers opening *at night*, relatively small, petals white to light yellowish; flowers strongly fragrant. Type species: *C. quarziticum* Tisch. To this I add *C. quaesitum* N.E.Br., *C. halenbergense* Dtr. et Schwant, *C. hians* N.E.Br., *C. elongatum* Tisch., *C. densipunctatum* Dtr. (?). The included species grow in a district which includes the southern portion of Great Namaqualand (3 species) and the northern portion of Little Namaqualand (3 species).

MORE VANDALISM

G. A. Frick

Ajo, Arizona, has its charms. Anyone viewing the town from the surrounding hills will have to admit that. The village is built around a park that shows all the "ear marks" of professional landscaping. The buildings surrounding the park are new, clean and the last word in early mission design in architecture. All in all a nice little desert community providing one never leaves the center of town.

Beyond this single block, civic pride, town planning and beauty have been forgotten. A stroll of 500 feet in any direction from this splendid square, and one may see how President Roosevelt's forgotten man lives.

Entering Ajo from the north the first sight to greet the desert traveler is a huge mature specimen plant of *Lemaireocereus thurberi* Eng. One can discern at a glance without leaving the machine that the plant was a wonderful specimen until civilized man came into the picture, then if you are unfortunate enought to be interested in plant conservation, you got out, examine the cactus and weep. This plant has had to suffer every abuse that a depraved vandalistic mind could conceive, and yet this pioneer survives and continues to throw out young shoots every year in defiance of man's treachery.

In calling this plant a pioneer, I mean just that, for this is the farthest north that this or any other species of Lemaireocereus has ever been found to occur.

Had this plant grown in the center of Ajo where the park is located instead of at the town's edge, it is safe to believe that it would not exist today to cause us concern, for the condition of this cactus is evidence that Ajoians have no interest in cacti and never did. The entire community is ore and metal-minded.

The Ajo sheriff has the reputation of being "tough" on desert plant robbers in his end of the county, but the laws governing that offense states it is unlawful to uproot or take cuttings and not one word about mutilation.

Well, what's to be done about it? Undoubtedly the worst offenders are boys, mostly young, also a few that have grown up. Fences are fashionable in Ajo, everybody owns one since ocotillos and haywire cost nothing, one more fence wouldn't be noticed. Who will do the job?

There is a group of our loyal members in Phoenix that are made up of influential Arizona citizens. They have recently organized the Arizona Cacti & Native Flora Society for the protection of the state's flora. They seek just such information as this. It is therefore in order to suggest that they sponsor the collection of funds to defray expenses of trimming off all dead and mutilated branches from the plant, construct a vandal proof fence around it and attach thereto a sign reading:

This is the farthest known norther extension of this species of cactus, *Lemaireocereus thurberi.* A reward of $10.00 will be paid for information leading to the arrest and conviction of any person caught mutilating same.

Cotyledon, Echeveria, or Dudleya?

(From Leaflets of Western Botany)

By Eric Walther

Several explanations might be adduced for the confusion that for so long has attended an understanding of Cotyledon, Echeveria, and Dudleya. Personal opinion will probably always continue as sufficient excuse for some to take a position different from the rest of the world, even where it leads to such an absurd treatment as that of Otto Kuntze who reduced the whole large family Crassulaceæ to the single genus Sedum. Limited information, based on insufficient dried material, so notoriously unsatisfactory in the case of succulent plants, might account for the failure of Bentham and Hooker in their "Genera Plantarum" to accord to these genera the status so justly theirs. Increased knowledge of the groups here considered, supplemented by intimate acquaintance both in the field and in cultivation, leaves little doubt that all three are generically distinct.

It is a far cry, indeed, from South Africa's Cotyledon to California's Dudleya and Mexico's Echeveria, and not merely as measured in miles. The present confusion is another instance where attaching too much weight to a single character, the relative amount of coherence of the petals, leads to false conclusions of affinity. Even if of undoubted importance in most other families, in the Crassulaceæ this character taken alone is of minor value. It is much more logical and probably much nearer the actual facts to consider Cotyledon proper as much more closely allied to the subfamily Kalanchoideæ, also of the Old World, than to the Echeverioideæ of the New World.

So much for Cotyledon; the case of Echeveria and Dudleya is rather different. Evidences of close relationship are abundant and clear, and both genera are probably descended, fairly recently, from a common ancestral type, perhaps to be found in some form we would class today as belonging to the subfamily Sedoideæ. The most striking difference between Dudleya and Echeveria is, of course, that of distribution, Dudleya never having been found in Mexico (outside of Lower California) and no Echeveria in California, Upper or Lower. This difference in range might be correlated with climatic influences, such as different seasons of precipitation, *i. e.*, summer rains or winter rains. Or it might be explained by postulating the presence or absence of some other factor, such as a special kind of pollenizing agent. Unquestionably the flower of Echeveria represents structurally a more highly specialized type, developed for the purpose of attracting a particular type of insect or bird. The usually nodding flowers of Echeveria, their commonly brighter coloration, the abundance of honey secreted by the much more prominently developed hypogynous glands, the correspondingly greater storage space provided for this honey in the enlarged basal cavity of the petals, the thick texture of the latter that is perhaps adapted to keep out robbers, their rigid erect posture that compels visitors

to pass the anthers and stigmas, all seem to be adaptations of the flower of Echeveria as contrasted to that of Dudleya, developed to attract certain visitors. Here there seem to be indications of specialization for attracting one particular type of visitor that will assure cross-fertilization, so all-important for both the maintenance of racial vigor and the variability necessary if the organism shall remain plastic and responsive to changing environment. The attention of ornithologists is called to the problem here presented, as we are inclined to attribute this differentiation of Echeveria to the influence of a particular type of humming-bird.

The three genera may be differentiated as follows:

A. Inflorescence, terminal, the vegetative axis determinate; plants of South Africa ..... *Cotyledon*

AA. Inflorescence always axillary and lateral, the vegetative axis indeterminate; plants of the New World.

B. Plants with basal leaves stem-clasping; flowers mostly pale, less often bright red or yellow; petals thinnish, neither prominently keeled nor conspicuously hollowed within at base, honey-glands small; sepals never spreading; bracts of scape often cordate or stem-clasping at base, not readily detached. Native to California, Lower California, and Arizona. Rarely cultivated ..... *Dudleya*

BB. Basal leaves not stem-clasping, often readily detached; flowers mostly bright-colored; petals commonly thick, prominently keeled on back and with conspicuous basal honey-cavity, hypogynous honey-glands large, mostly thick and truncate; sepals often widely spreading at anthesis; bracts of scape never stem-clasping, only very rarely subcordate at base, usually readily detached. Native to Mexico, Central America, and northern South America, a single species reaching Texas. Commonly cultivated ..... *Echeveria*

Believing that these three groups are best understood as distinct genera, we feel it proper to publish the following new combination: *Dudleya lagunensis* (Munz) Eric Walther (*Echeveria lagunensis* Munz, Bull. S. Calif. Acad. Sci., 31:64,—1932).

CATALOGUES RECEIVED

Mr. Yukichi Ohashi of Tokio, Japan, sent an interesting 12 page catalogue of the Chigusaen Nursery. This 9x12 booklet contains 30 illustrations of cacti and lists the plants in both English and Japanese. Many wonderful crests seem to originate in far away Japan. Our Fellow Member Mr. Ohashi, is the author of a 114 page book on Cacti; this, too, is written in Japanese and also shows the English names. The Cactus Society appreciates the work being done by our members in Japan.

Member George G. Randall of Long Beach writes:

"This season I made the very serious mistake of mixing German peat with soil. To my sorrow I have found that seedlings do not like peat.

"I have exploded the old "sand box" idea of rooting cuttings in sand. I find they root much quicker, in fact in half the time, in my soil mixture and with fewer losses."

EDITOR'S NOTE: Next year we will look to Mr. Randall for an article on growing seedlings.

BOOKS

Mail Address: THE CACTUS JOURNAL, 6162 North Figueroa St., Los Angeles, Calif.

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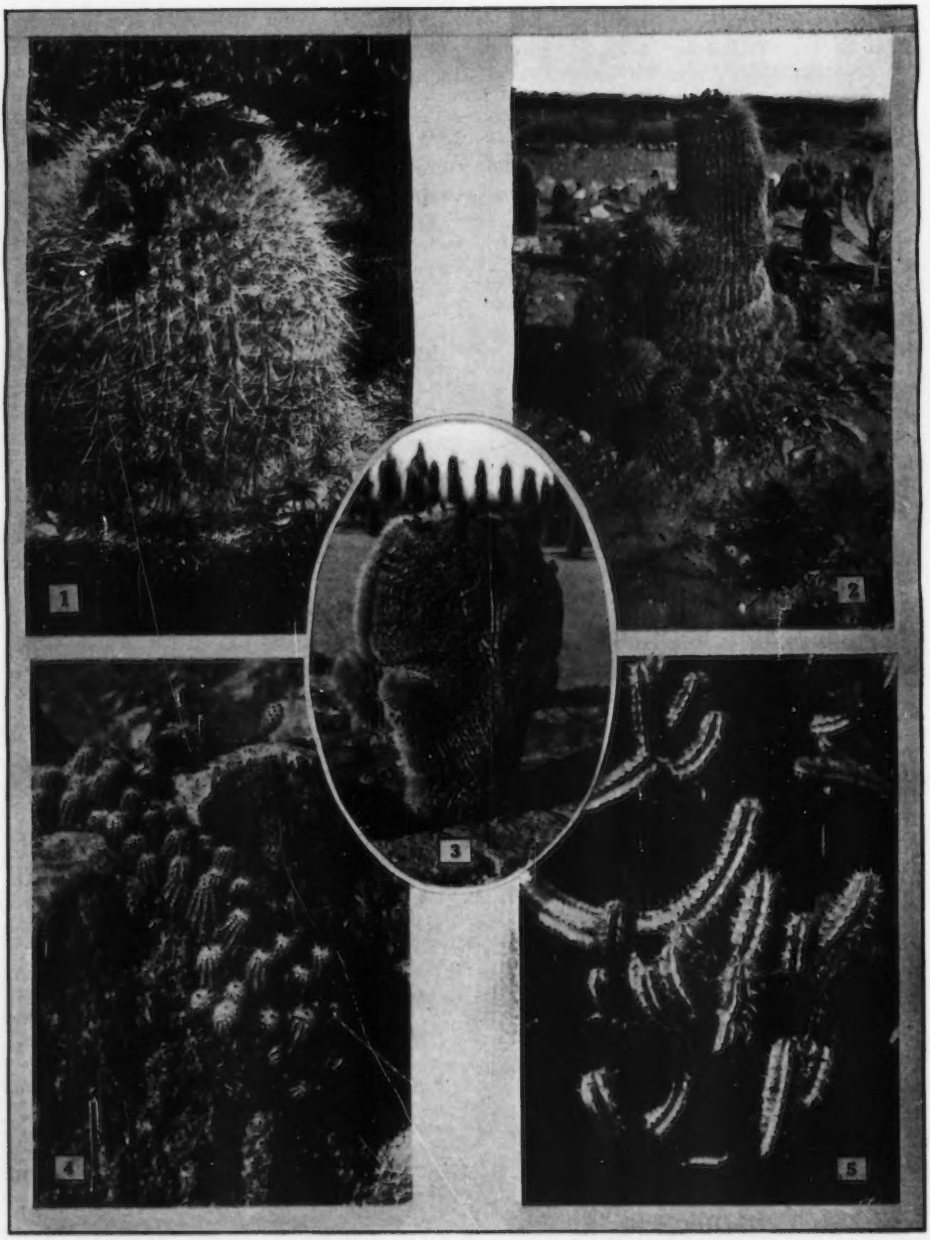
BOUND VOLUMES of the Cactus Journal, Vol. I, II, III, IV and V, are now on sale; these will be very valuable before many years, so take advantage of the opportunity at this time. Volume I, $25.00, Volume II, III, $9.00 each. Volumes IV and V, $6.00 each.



(1) A species of *Trichocereus* not described in Britton & Rose. It grows in a limited area in a protected spot of the mountains above Mendoza, Argentina. Photograph from Dr. Lionel G. Dodds of Mendoza. (2) The unnamed *Trichocereus* showing its manner of growth with many branches. This variety has long, weak, white spines in contrast with the heavier red spines of Photograph 1. (3) A crested plant of the undescribed species. Dr. Dodds suggests *Trichocereus andina* as appropriate for this species. (4) *Echinocereus pacificus*, a rare species from northern Baja California growing in rocks along the coast. This is an exceptional plant of the species. (5) *Myrtillocactus cochal* growing in Baja California, Mexico. Nos. 4 and 5 photographed in their native habitat by Ted Hutchison.

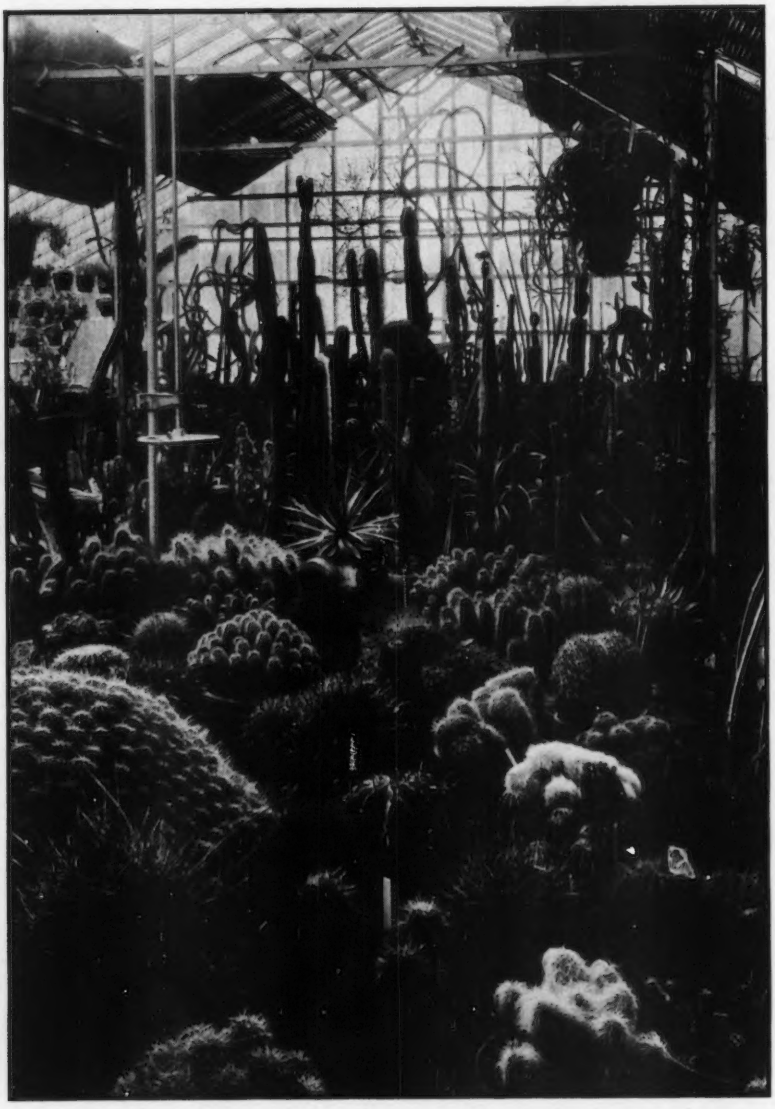
Harrisia martinii

R. W. POINDEXTER

Our President Emeritus has stated that one of the primary causes which motivated the founders of our Society was a feeling of distress at the misguided ignorance of those who persistantly referred to each and every night-blooming cactus as "the night-blooming cereus."

Of the several hundred cacti which might fall within this classification, I have yet to run across one which blooms more readily and profusely than *Harrisia martinii*. The plant illustrated had 83 flowers when photographed, and kept blooming, batchwise, all summer. The brilliant carmine fruits are equally ornamental, and were what first attracted me to the plant. These make excellent Christmas decorations. If left on the plant they burst open, but if branches are cut off just before the fruit is ripe and kept in a cool place indoors, they will last through the holidays.

It is an easy plant to grow, its requirements being a sunny situation, rich soil, plenty of water in warm weather and some support to keep its rambling branches off the ground.



An eviable collection growing under glass in New Jersey. This shows a small part of H. O. Bullard's specimen plants.

SECRETARY'S COLUMN

First Annual Long Beach Cactus Show

The Long Beach Cactus Club is to hold its first cactus show, the proceeds to be used for the Specimen Garden which is now under construction in Recreation Park. The show will be held on the lot adjoining the residence of Drs. F. L. and Rosa Kennedy, 1765 Stanley Ave., one-half block south of State Street.

An entrance fee of 50c will entitle the exhibitor to a table 3½ by 10 ft. In consideration for the payment of this fee exhibitors may take orders, sell, and deliver plants during the show, and will be entitled to associate membership in the Long Beach Cactus Club.

The show will be held for two days, beginning at 1 P. M. Saturday, July 27 and ending at 10 P. M. Sunday July 28. There is plenty of parking space. The grounds will be well lighted and appropriately decorated. Ribbons and prizes will be awarded to amateurs only. The admission price will be 15c for adults and 10c for children. Door prizes will be awarded each afternoon and evening.

The plants may be brought in Friday evening, and must be in place by 11 A. M. Friday, as at that time every one must leave the grounds while the exhibits of the amateurs are being judged.

The public will be admitted from 1 P. M. until 10 P. M. on Saturday, and from 9 A. M. until 10 P. M. on Sunday.

MEETING NOTICE

The July meeting of the Society has been set for July 14, and will be held in conjunction with our affiliated society, The Long Beach Cactus and Succulent Society. Mr. Cramer of the Long Beach group is completing the arrangements. The group will meet at 10:30 A. M. at the home of Mr. and Mrs. Frederick Bixby, Rancho Los Alamos. From American Ave., Long Beach, proceed East on Anaheim St. four miles to the Rancho. Bring picnic lunches. Coffee will be provided by our host. The new officers of the Long Beach Society will be introduced at the luncheon. Later the gardens of Mrs. M. D. Potter, 4509 E. Ocean Ave.; Mr. R. S. McGaughey, 1535 Hellman St., and of Yale Dawson will be visited.

C. L. CLUM, *Secretary.*

A specimen plant of Carnegiea gigantea sent to the Missouri Botanical Garden weighed over a half ton.

EDITOR'S NOTE

Only legitimate dealers are asked to advertise in the JOURNAL. If two or more proven complaints are received by the Society, no further advertising will be accepted from that dealer until all difficulties have been adjusted.